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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/401,839	09/22/1999	MAURICE KENT GATELY	1803-247	5191

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EXAMINER	
MERTZ, PREMA MARIA	

ART UNIT	PAPER NUMBER
1646	

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/401,839	GATELY ET AL.	
	Examiner	Art Unit	
	Prema M Mertz	1646	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 33-44 are under consideration.

2. Receipt of applicant's arguments and amendments filed on 12/11/2003 is acknowledged.

3. Applicant's arguments filed on 12/11/2003 have been fully considered but were non-persuasive. The issues remaining are stated below.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim objections

5. Claims 35-38 and 41-44 are objected to.

This objection is maintained for reasons of record set forth at page 2 of the previous Office action (6/12/03).

Applicants argue that none of the claims that are subject to the objection have been allowed and therefore the objection is not ripe to be made. However, these claims will never be allowable until the objection is obviated.

Secondly, Applicants argue that the duplicate claims are not duplicates because they contain different limitations and the claims differ from each other in exactly the same way corresponding pairs of claims in the Trinchieri '523 patent differ from each other. However, contrary to Applicants argument, each application is examined on its own merits and the allowability of the claims in the Trinchieri '523 patent or its alleged duplicity is irrelevant to the duplicity of the claims in the instant application. Therefore, appropriate correction is requested.

Claim Rejections - 35 USC § 102(e)

6. Claims 33-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Trinchieri et al. (US Patent No. 5,811,523).

This rejection is maintained for reasons of record set forth at pages 3-9 of the previous Office action (6/12/03), at page 5 of the previous Office action (1/24/00) and on page 2 of the previous Office action (4/20/01).

Applicants argue that the 07/269,945 application describes only partial amino acid sequence data for the two subunits of IL-12, nonetheless benefit to Trinchieri has been accorded to this application, despite that all the claims recite the complete amino acid sequence of at least one subunit. However, contrary to Applicants arguments, even though partial amino acid sequences have been disclosed in the '945 application, priority has been accorded because only 6 amino acids are enough to raise antibodies to a protein. Furthermore, even if the entire amino acid sequence of a protein is disclosed, antibodies are raised to fragments of the protein.

Applicants argue on pages 5-9 of the response (11/12/2003), that the Examiner's action is contrary to established case law under which the written description requirement can only be met for a claim reciting an amino acid sequence if the complete amino acid sequence is disclosed and has cited the *Regents of the University of California v. Eli Lilly & Co.* decision in this regard. However, contrary to Applicants arguments, the instant invention drawn to antibodies is a very different invention relative to the absence of an adequate written description requirement for the DNA encoding human insulin cDNA in *Lilly*. In *Lilly*, the claims in the patent at issue recited a human insulin cDNA, however, the Court held that while the patent contained a description of a general method of producing human insulin cDNA and a

description of the human insulin A and B chain amino acid sequences that the cDNA encodes, the patent "did not provide a written description of human insulin cDNA itself". Furthermore, the patent at issue in Lilly, contained generic claims reciting mammalian and vertebrate insulin cDNAs while there was a full nucleotide sequence disclosed only for rat insulin cDNA. The Court held that the claims drawn to "human", "vertebrate" or "mammalian" insulin cDNA were invalid. The claims in the instant case are very disparate from the claims and the issues in Lilly. As explained above, partial amino acid sequence as described in the '945 application is sufficient for eliciting antibodies because only 6 amino acids are required for production of antibodies to a peptide. The disclosure of partial amino acid sequences in the '945 application fulfils the requirements for enablement and written description. Contrary to Applicants arguments on page 10 of the response (11/12/2003), the specification of '945 supplies the amino acids sequence and the novel aspects of the invention in order to constitute adequate enablement.

Furthermore, Applicants argue that in the Trinchieri's patent there is a bare description of "diagnostic and therapeutic uses" with absolutely no disclosure of what condition or disease can be diagnosed or therapeutically treated. However, contrary to Applicants arguments, Trinchieri has very clearly disclosed that the novel NKSF polypeptide has the ability to induce production of gamma interferon in vitro in human peripheral blood lymphocytes in the '945 application. It is old and well known that interferon is active in the treatment of viral infections. Furthermore, in column 9, lines 64-67 and column 10, lines 1-14, of the 5,811,523 patent, Trinchieri discloses the conditions to be treated by NKSF.

Applicants arguments with respect to lack of a written description in the '945 application are non-persuasive because it is old and well known that production of antibodies does not require a written description of the entire protein, but requires a description of sufficient parts of a protein to enable the production of antibodies. Applicants repetitiously keep arguing that there is no written description nor is there an adequate enablement in the '945 application. However, contrary to Applicants arguments, since the '945 application provides the amino acid sequence of parts of the IL-12 proteins sufficient to link to a heterologous protein like keyhole limpet haemocyanin sufficient to elicit the production of antibodies, the '945 application is enabled and provides the necessary written description to produce antibodies to the proteins. Contrary to Applicants arguments, the sequence of an entire protein is "not" required for the production of antibodies. The sequence of the entire protein is irrelevant as long as fragments of the protein sufficient to elicit the production of antibodies is disclosed.

Furthermore, contrary to Applicants arguments, the sequence of a protein is an inherent characteristic of a protein. In the '945 application, Trinchieri did not even need to disclose the entire protein sequence. Describing a protein by its physical characteristics is sufficient because these are inherent characteristics of the protein. Additionally, describing peptides, which are fragments of the protein, are a sufficient description of the amino acid sequence of the protein required to elicit the production of antibodies. Therefore, there is no written description issue in disclosure of the protein fragments in the '945 application with respect to the antibodies being claimed. The only written description required is sufficient amino acid sequence (six amino acids) to elicit the production of antibodies. The entire amino acid

sequence of the protein is not required to describe the IL-12 protein for the production of antibodies.

Applicants argue that recombinant produced IL-12 was not available as of the November 10, 1988 filing date of the '945 application. However, as argued above, to elicit the production of antibodies, the entire sequence of the IL-12 protein is not required. Applicants argue that the results in D'Andrea et al show that antibodies generated against recombinantly produced NKSF heterodimer fail to react with the 30-35 kD NKSF subunit and react only with the NKSF 40 kD subunit. Therefore, Applicants are arguing that the antibodies generated against recombinantly produced heterodimer of IL-12 do not react with the 30-35 kD subunit. Applicants are not arguing that antibodies raised against a peptide of the 30-35 kD subunit will not react with the 30-35 kD subunit. The Examiner, in turn is not arguing about antibodies to the recombinantly produced IL-12 but that antibodies to fragments of the 30-35 kD subunit were enabled in the '945 application. Therefore, antibodies to fragments of the 30-35 kD subunit were enabled in the '945 application as on 11/10/1998.

With respect to the Chizzonite et al. reference, this reference is irrelevant because it does not disclose antibodies to fragments of the 40 kD and 30-35 kD subunits. Insofar as Applicants arguments with respect to the diagnostic and therapeutic uses for the claimed antibodies is concerned, the fact that the instant IL-12 protein stimulates peripheral blood mononuclear cells (PBMC) or phytohemagglutinin (PHA)-induced blast cells or natural killer cells to produce gamma interferon indicates that the factor can be used to treat viral infections since interferon is administered in the treatment of viral infections.

Applicants argue that Trinchieri's failure to describe murine or human antibodies to IL-12 leads to the conclusion that such subject matter cannot be claimed. However, contrary to Applicants arguments, the Examiner has previously cited Jones et al. (1986), Liu et al. (1987), Verhoeyen et al. (March, 1988) and Tan et al (1985) for the proposition that human and murine antibodies could be constructed without having to resort to undue experimentation and were not beyond the state of the art at the time the '817 and '945 applications were filed. Therefore, the '817 and '945 Trinchieri applications are enabling for murine and human antibodies to IL-12 as claimed in the '523 patent. The essential disagreement appears to be that there is no disclosure of the entire IL-12 amino acid sequence in the '945 application. Applicants are again reminded that it is well known in the art that only a stretch of 6 amino acids is required for eliciting an antibody response.

Claim Rejections - 35 USC § 103

7. Claims 33-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trinchieri et al. (U.S. Patent No. 5,811, 523).

This rejection is maintained for reasons of record set forth at page 10 of the previous Office action (6/12/2003), pages 3-4 of the previous Office action (1/24/00) and on page 3 (4/20/01) and for the reasons as set forth in paragraph 3 above because the Trinchieri '523 patent is entitled to the filing date of the '945 application.

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Advisory Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prema Mertz whose telephone number is (703) 308-4229. The examiner can normally be reached on Monday-Friday from 7:00AM to 3:30PM (Eastern time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler, can be reached on (703) 308-6564.

Official papers filed by fax should be directed to (703) 305-3014 or (703 308-4242. Faxed draft or informal communications with the examiner should be directed to (703) 746-5300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [yvonne.eyler@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark Office on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Prema Mertz

Prema Mertz Ph.D.
Primary Examiner
Art Unit 1646
January 15, 2004